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BROOKHAVEN
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for the U.S. Department of Energy

Memo

Date: *October 17, 2003*

To: *D. Lowenstein*

From: *Dennis J. Ryan, ALARA Committee Chair* 10/17/03

Subject: **PROPOSED C-A FY 2004 COLLECTIVE DOSE GOAL**

The C-A ALARA Committee met to review the department's collective exposure for FY' 03 against the "as run" operating schedule and to develop a proposed dose goal for FY' 04. As in the past collective dose was strongly correlated with the department's operating schedule.

FY' 03 actual dose has been significantly less than the dose goal. This is primarily a result of two factors. First the lack of a high-energy physics program (high-intensity protons) has allowed the Booster and AGS dose rates to decay to less than half of the FY'02 levels. Secondly, of the five large maintenance jobs scheduled only two were actually completed. The additional work would have accounted for approximately 3 to 5 person-rem exposure.

FY'04 has scheduled two weeks of high-energy physics tests at the end of the run. The increase in component activation will result in higher dose rates during the maintenance period. Because of this it is recommended that due consideration be given to scheduling extended maintenance periods following operations with ions to maximize the cool down of activated equipment.

The FY'03 model used to predict exposure for both operations and maintenance is as follows:

Annual Dose Goal (person-mrem) $\leq$ A*3000 + B*1500 + C*500 + D*500 + E*1500

Where:
A=no. of equivalent HEP program months in FY 2004
B=no. of g-2 program months in FY 2004
C=no. of RHIC and NSRL program months in FY 2004
D= no. of months of U-line experiments in FY 2004
E=no. of scheduled maintenance months in FY 2004

Based on the current operating schedule for FY' 04 (attached) the recommended C-A dose goal for FY' 04 is 11.75 person-rem, 5.75 person-rem lower than last year's goal. This assumes seven program months for RHIC and NSRL operation, four-and-a-half months of maintenance and half-a-month of slow beam operation.

A review of individual exposures over the last five years indicates that only four C-AD personnel have exceeded 750-mrem/year exposures. A reduction in the department Administrative Control Level (ACL) would normally be appropriate for this situation. However, with upcoming high intensity proton operations for the MECO and KOPIO experiments the committee recommends the C-AD ACL remain at 1000 mrem/person. Based on discussions an additional departmental control will be placed on all C-AD workers looking to exceed 750 mrem/yr. The ALARA Chairman and any 3 members of the ALARA Committee as a minimum shall conduct a review prior to any worker exceeding 750 mrem. Written documentation of the review shall be maintained in the ALARA files.

The C-A ALARA committee met on 10/16/03 to review these issues, based on the reduced primary beam area work load and continued cooling of the machines in FY'03, concurs with the above proposed dose goals and ACL values for FY 2004. Your concurrence is requested so that I can transmit them to the BNL ALARA Coordinator.

RP6269SR.03

Attachment C-A Operations Schedule for FY' 03-04

Concurrence: _____ Date: 10/17/03

D.I. Lowenstein
C-A Department Chairman

http://server.c-ad.bnl.gov/esfd

C-A Operations-FY03-04

28 Sept 03

FY 2004 subject to funding etc.

pending funding
Commissioning
schedule to be determined
setup/ramp up luminosity